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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/509,920

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Philipp Stossel

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EXAMINER

WILSON, MICHAEL H

ART UNIT

PAPER NUMBER

1794

MAIL DATE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/509,920	<b>Applicant(s)</b> STOSSEL ET AL.	
	<b>Examiner</b> MICHAEL WILSON	<b>Art Unit</b> 1794	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 September 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4 and 16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Response to Amendment*

1. This Office action is in response to Applicant's amendment filed 18 September, 2008.

Claims 1-4 and 16 are pending.

2. The rejection under 35 U.S.C. 102(b) of claims 3 and 4 as being anticipated by Ma et al. (US 6,916,554 B2), is overcome due to applicant's perfecting of foreign priority in the amendment filed 18 September, 2008.

The filing date of Ma et al. (US 6,916,554 B2) lies between the filing date and the foreign priority date of the present application. Under MPEP 706.02(b), rejections based on 35 U.S.C. 102(e) can be overcome by perfecting the filing date of the priority document. Applicant's submission of certified priority document on 4 October, 2004 and its English language translation on 18 September, 2008 results in the perfection of the foreign priority filing date. Therefore, Ma et al. (US 6,916,554 B2) is no longer properly applicable as prior art against present claims 3, 4 and 16.

However claims 1 and 2 include a broader disclosure which is not disclosed by applicant's foreign priority document. Claims 1 and 2 include compounds other than those of compounds III, IV, V, and VI. Therefore claims 1 and 2 are not supported by foreign priority, thus Ma et al. qualifies as prior art for claims 1 and 2.

3. The rejection under 35 U.S.C. 102(b) of claims 1 and 2 as being anticipated by Ma et al. (US 6,916,554 B2), is maintained.

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4. Objections to the Abstract and Specification are withdrawn due to applicants amending of the abstract and specification in the reply filed 18 September, 2008.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1 and 2 are rejected under 35 U.S.C. 102(e) as being anticipated by Ma et al. (US 6,916,554 B2).

Regarding claims 1 and 2, Ma et al. disclose a compound of instant formula (I) wherein M is Ir, n is 3, and Z is CR (column 18, table 1, compound 11).

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 1-4, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Igarashi et al. (US 2001/0019782 A1) as evidenced by Moore et al. (US 5,484,922).

Regarding claim 1, Igarashi et al. disclose phenylpyridine complexes of iridium (complex 1-1, page 10). The reference each ring may be substituted [0014]. The reference also discloses cyano is a suitable substituent [0050] and discloses it used on the phenyl ring of complex 1-31 (page 13). However the reference does not explicitly disclose a compound of instant formula (I).

It would have been obvious to one of ordinary skill in the art at the time of the invention to make compounds similar in structure to those disclosed by Igarashi et al. in order to provide a variety of compounds suitable for use as an emissive material in an organic light emitting device. The use of cyano on the phenyl ring of 2-phenylpyridine would be obvious to one of ordinary skill in the art given that Igarashi et al. disclose cyano as a suitable substituent [0050] and demonstrate its use on the phenyl of a similar complex (page 13, complex 1-31), which would also lead one of ordinary skill to reasonably expect cyano would result in compounds with similar properties suitable for

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the same purpose. It would further be obvious to one of ordinary skill in the art to substitute in the position para to the carbon-metal bond. The substituent effects of cyano in the para position is known to be similar to that of the meta position as evidenced by Moore et al. (column 8, line 60). Therefore one of ordinary skill in the art would recognize the para position as an equivalent to the meta position used by Igarashi et al., and therefore a suitable position for substitution.

Regarding claims 2-4 and 16, modified Igarashi et al. disclose all the claim limitations as set forth above. Additionally the reference discloses several compounds where n is 3, a is 0 or 1, and b is 0 ([0085], pages 10-13), meeting the requirements of the claims.

### ***Response to Arguments***

10. Applicant's arguments filed 18 September, 2008 have been fully considered but they are not persuasive.

Applicant argues that the Examiner is not correct with his statement that complex 1-31 (page 13) are similar and differs only in the position of the cyano group on the phenyl ring. Further stating that the Examiner is not correct in supposing that substitution of complex 1-31 in the para-position instead of the meta-position would lead to complexes of the present invention, as the ligand structure of complex 1-31 is different as discussed above (forms a 6-membered ring with the iridium).

The examiner agrees that complex 1-31 does differ from complex 1-1, tris(phenylpyridine)iridium(III), however the examiner does not argue that the complexes

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only differ by the cyano substituent. The examiners argument is that it would be obvious to one of ordinary skill in the art to use a cyano substituent on the phenyl ring of the *phenylpyridine ligand* of complex 1-1 given the disclosure of cyano as suitable for the phenyl ring of the ligand in complex 1-31. The complexes are *similar* (but not identical), taught to have similar properties and used for the same purpose. One of ordinary skill seeing complexes 1-31 and 1-23 are both disclosed as suitable would reasonably expect that a cyano substituted version of complex 1-1 would also be suitable. Such a complex would bear a cyano substituent in the meta-position of the phenyl ring. Shifting the cyano substituent from the meta to the para position (in regards to the carbon-metal bond) would further be obvious to one of ordinary skill in the art. Complexes where the cyano is meta-substituted versus para-substituted would only differ in the position of the cyano substituent by a single bond. One of ordinary skill in the art would reasonably expect a para substituted cyano complex to have similar properties and suitable for the same purpose as the meta substituted cyano complex. Moore et al. is relied upon to give evidence that the electron withdrawing effect of the substituent would be similar in the two positions, which would lead one of ordinary skill in the art to expect the complexes to have similar properties and be suitable for the same purpose.

While applicants argue that Moore would not lead the person skilled in the art to the invention because small differences in the position of a substituent or in the physical properties of a substituent, as expressed by small differences in the Hammett constant, have a large influence on the physical properties of the complex, such as emission

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color, efficiency, etc, applicants present no evidence to support their position. Case law holds that compounds which are position isomers (compounds having the same radicals in physically different positions on the same nucleus) are generally of sufficiently close structural similarity that there is a presumed expectation that such compounds possess similar properties. *In re Wilder*, 563 F.2d 457, 195 USPQ 426 (CCPA 1977). See also *In re May*, 574 F.2d 1082, 197 USPQ 601 (CCPA 1978) (stereoisomers prima facie obvious).

Further applicants argue that their compounds are advantageous as compared to Igarashi in that they show blue phosphorescent with flat efficiency curves. However applicants provided no evidence to support their position.

### ***Conclusion***

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.



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12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL WILSON whose telephone number is (571) 270-3882. The examiner can normally be reached on Monday-Thursday, 7:30-5:00PM EST, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on (571) 272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

13. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MHW

/Callie E. Shosho/  
Supervisory Patent Examiner, Art Unit 1794